

National Weather Service



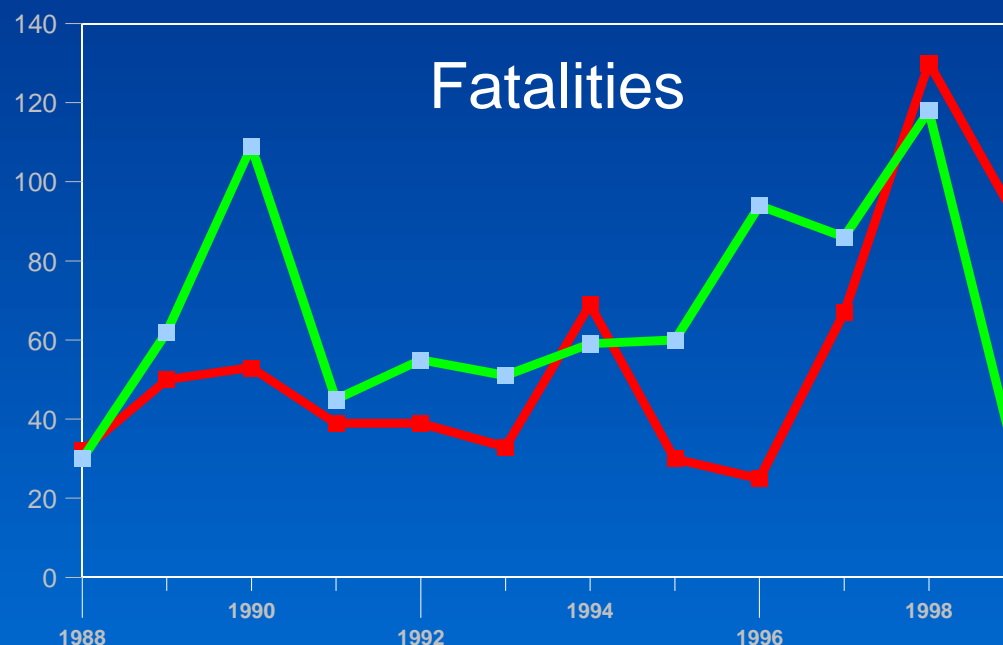
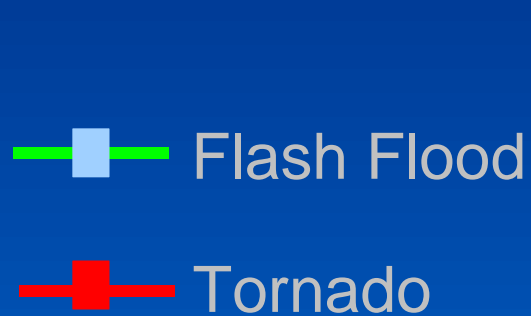
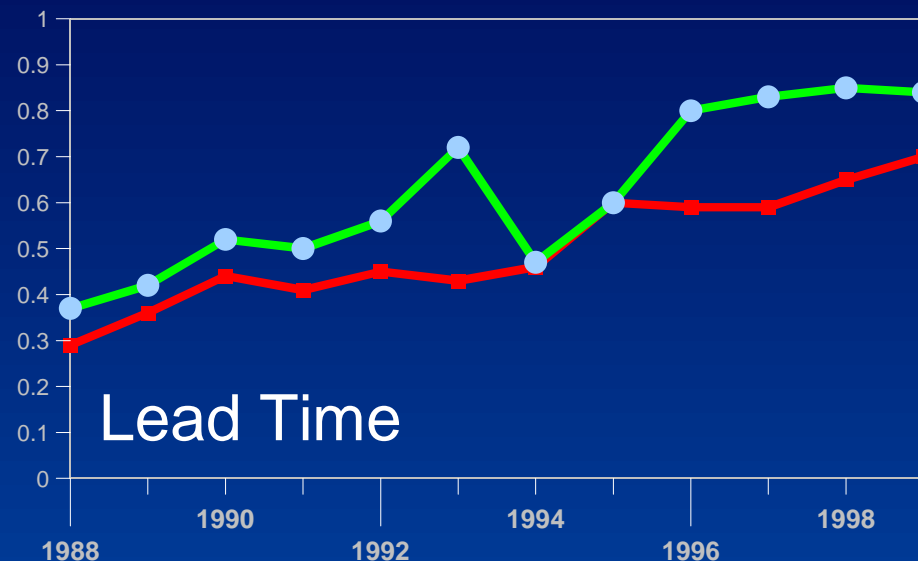
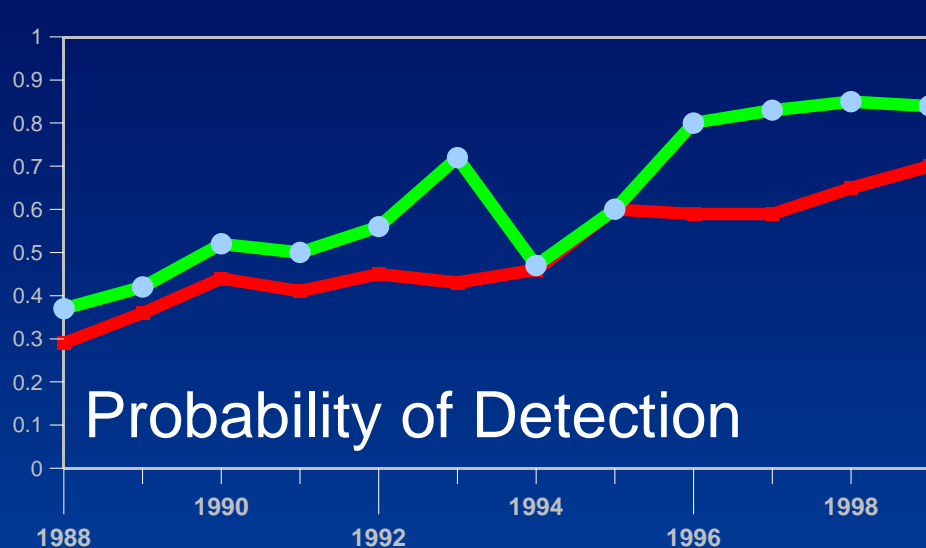
Flash Floods... The *Human* Impact

Don Wernly
Flash Flood Conference
Atlanta, Georgia
May 10, 2000



Flash Floods

How The NWS Is Doing

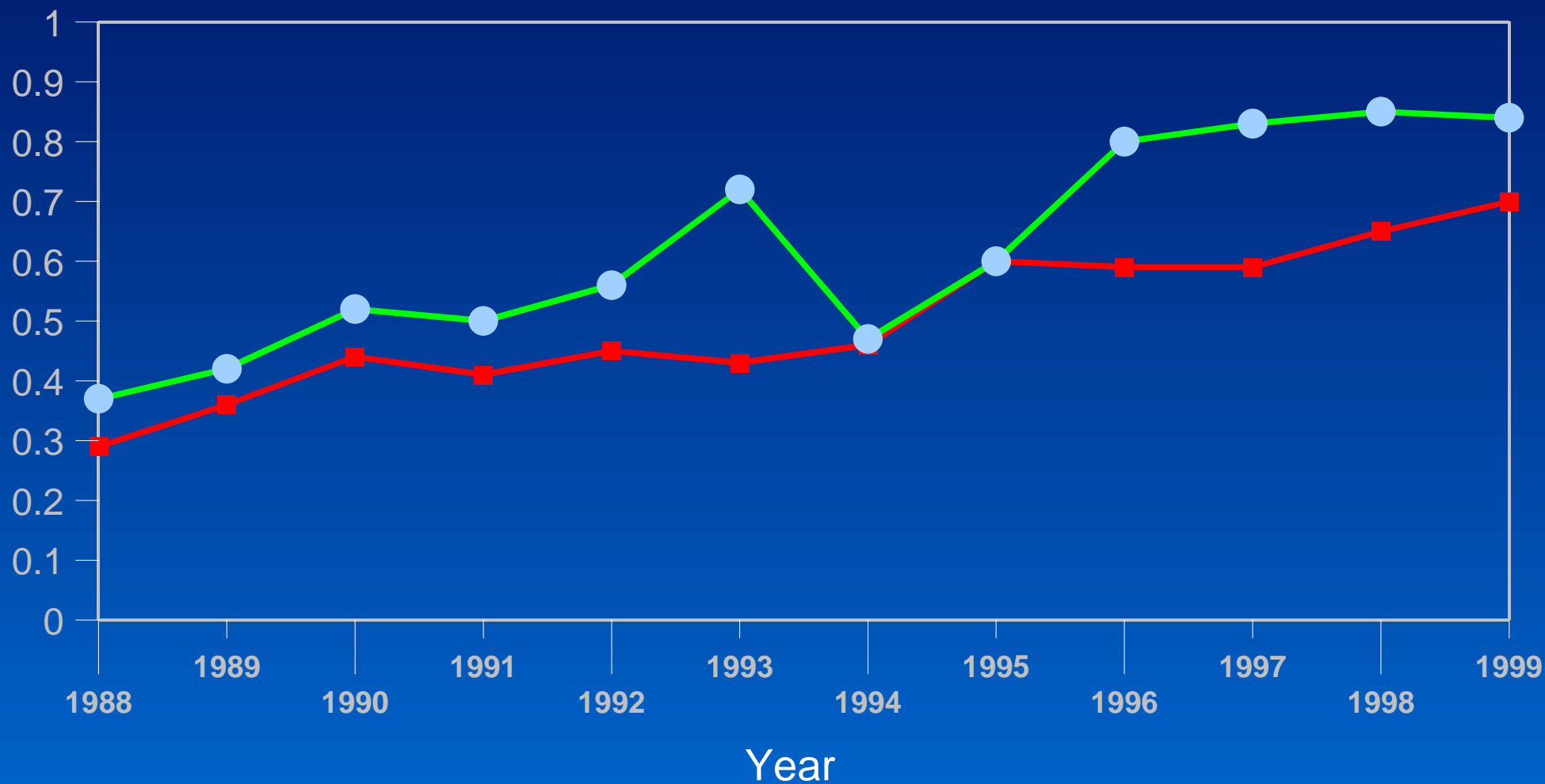




Flash Floods

Probability of Detection

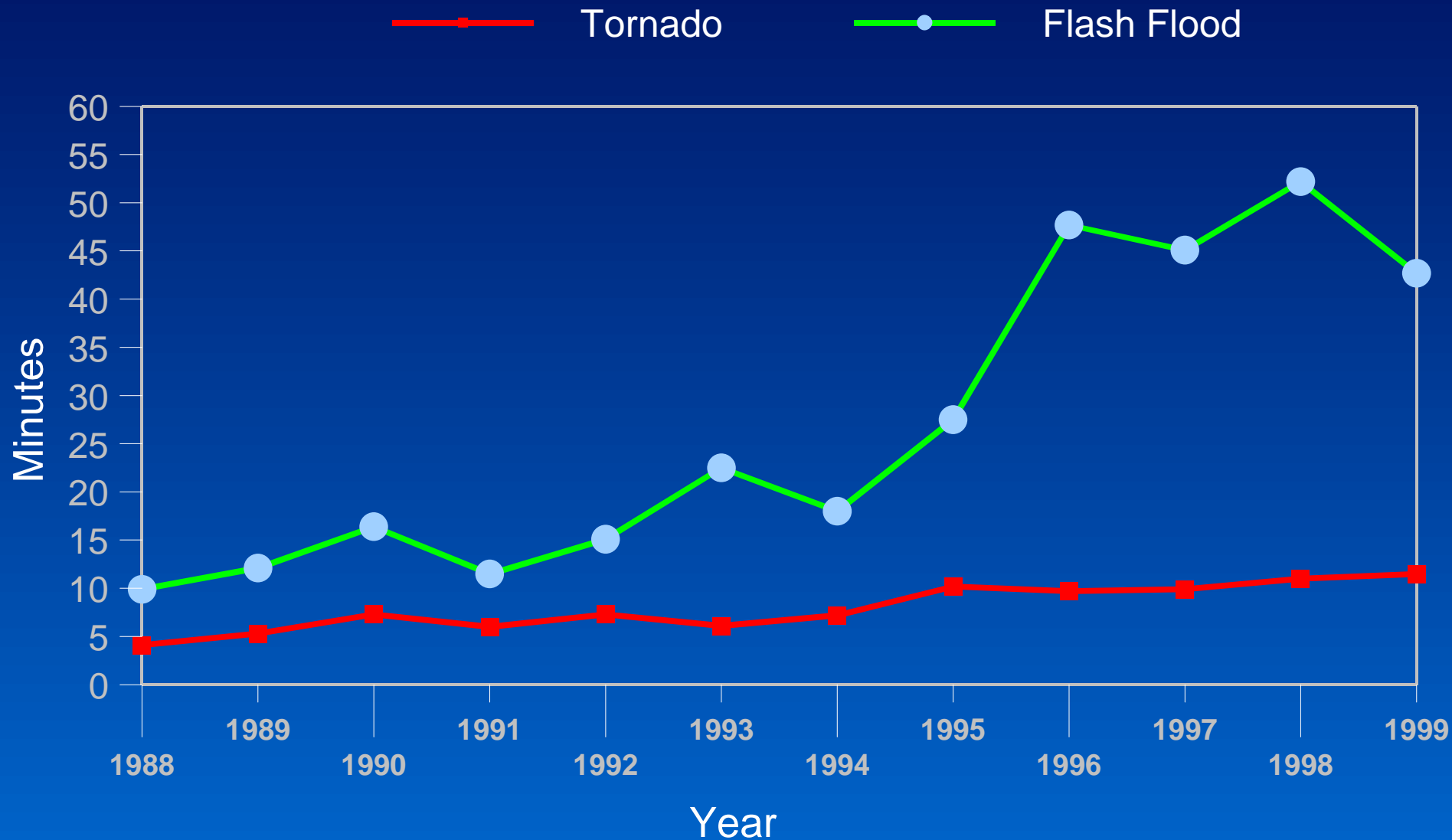
Tornado Flash Flood





Flash Floods

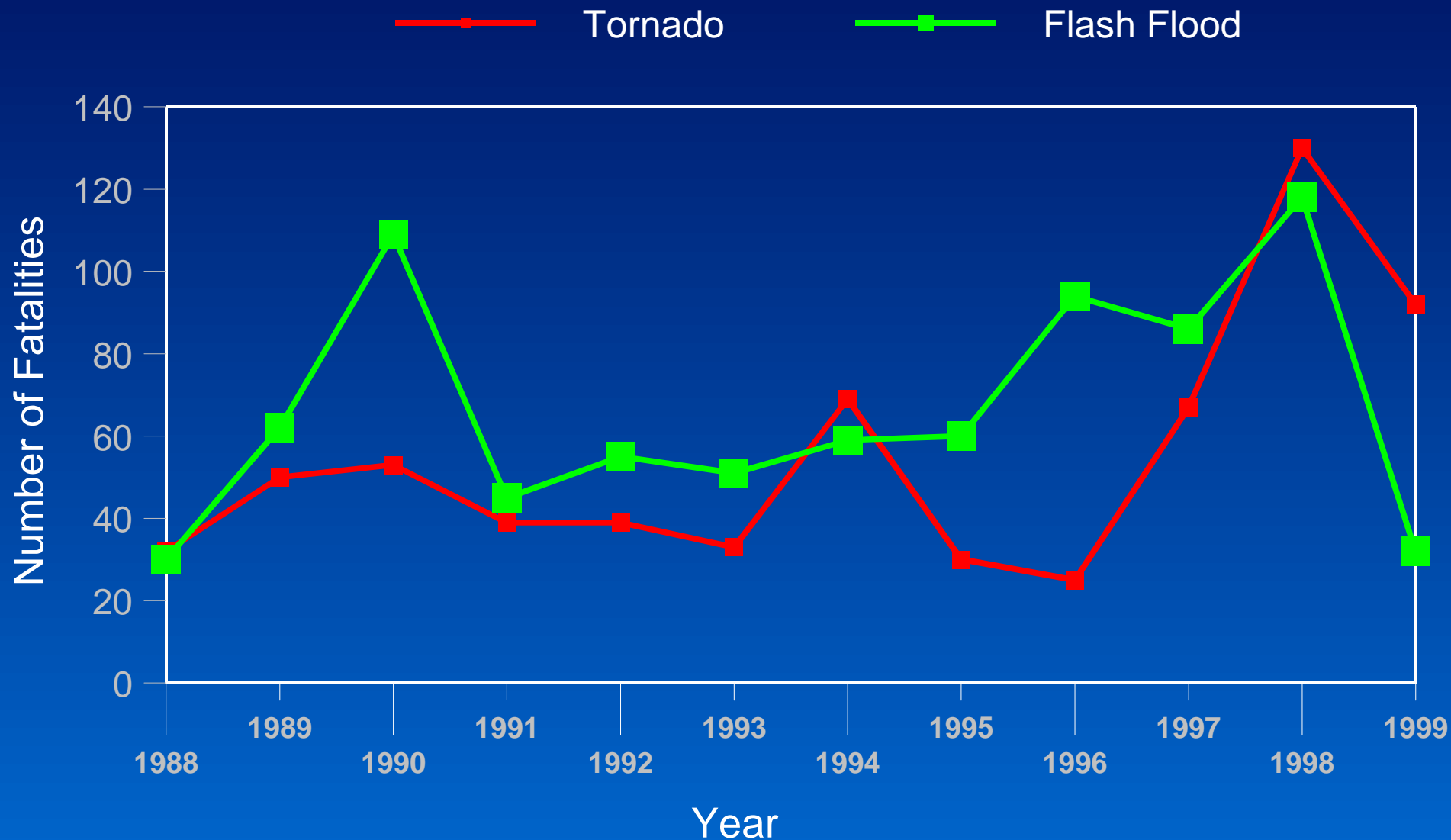
Lead Time





Flash Floods

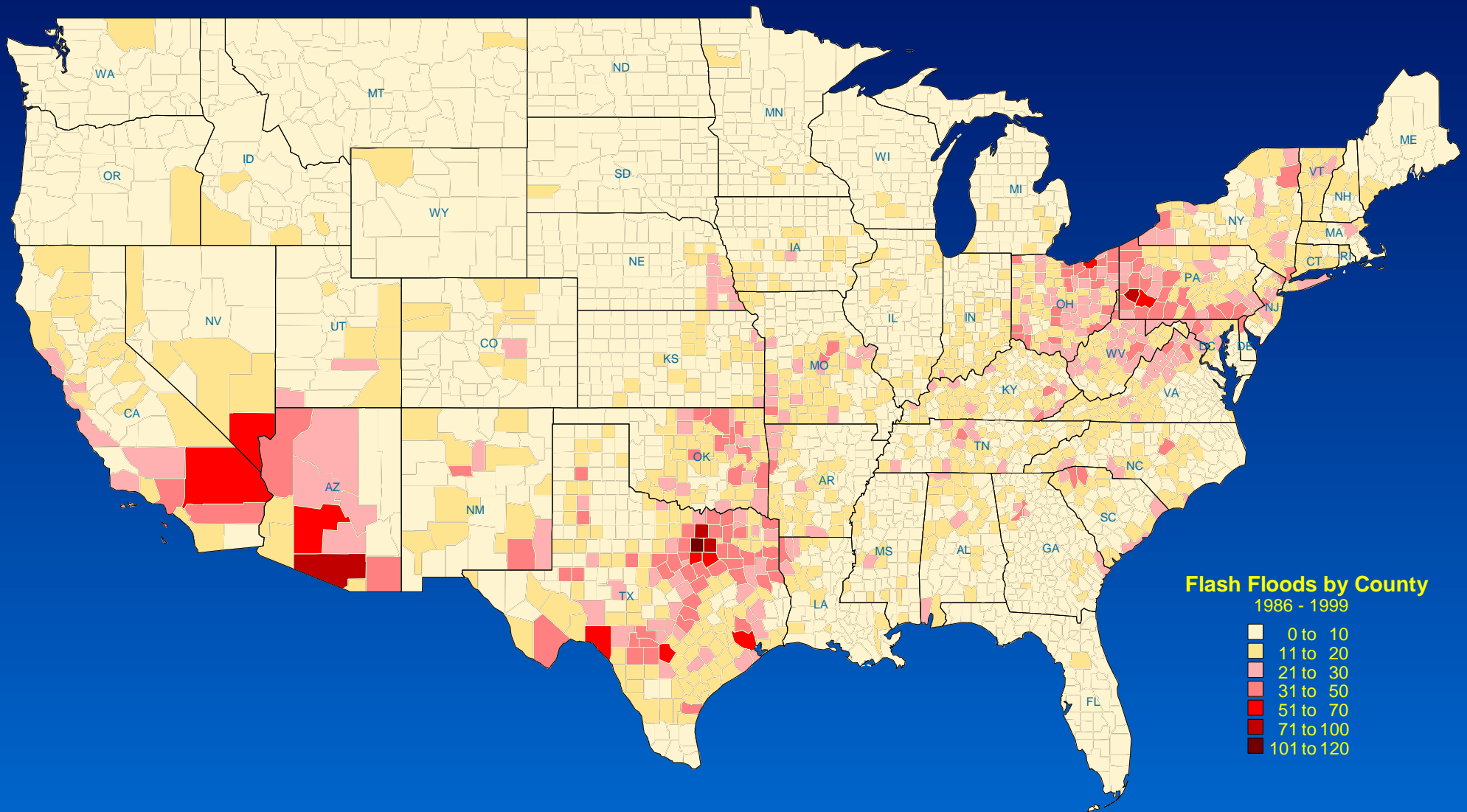
Fatalities





Flash Floods

Where They Occur





Flash Floods

Who Dies Where?



< Sex:
60% Males
40% Females

< Age:
Overall 30-39
Males 30-39
Females 20-29

< Location:
52% Vehicles
27% In Water
8% Homes

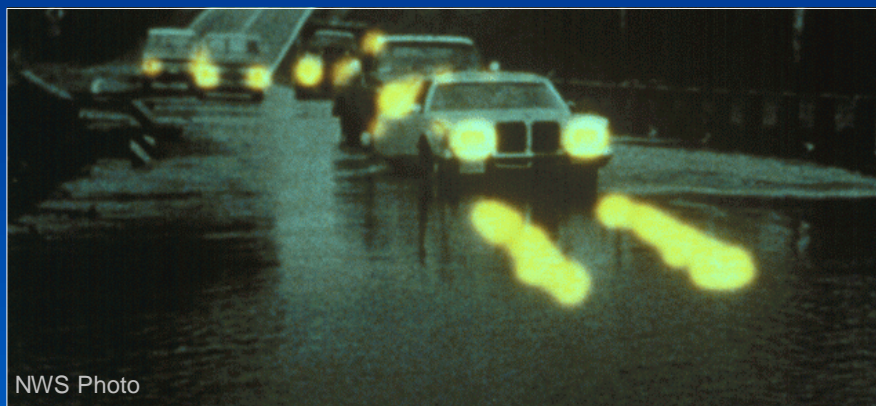




Flash Floods

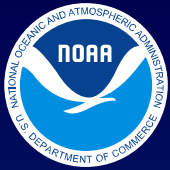
Why So Many Deaths?

- < Uncertainty over what flash floods are
- < Under appreciation of the power



NWS Photo

- < Inability to communicate and personalize risk
- < Events last longer leaving more time for inappropriate action



Th Impact

Beyond the Bodies

Human
Suffering



FEMA Photo

Environmental



FEMA Photo



FEMA Photo

Economic



Shutterstock Photo

Health



Th Impact

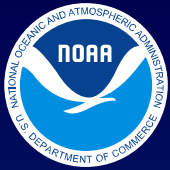
Beyond the Bodies



< Human Suffering

- Physical
- Psychological





Th Impact

Beyond the Bodies



< Economic

- Lost Businesses/
Jobs
- Health Care Costs





Th Impact

Beyond the Bodies



< Environmental

- Ecosystem Damage
- Pollution-- Impacts on Agriculture and Aquaculture
- Infestations





Th Impact

Beyond the Bodies



FEMA Photo

< Health

- Disease
- Injuries
- Chronic Medical Problems





Flash Floods

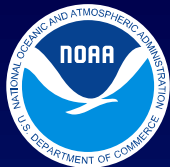


Where Do We Go From Here?

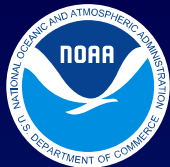


FEMA Photo













Flash Floods

Who Dies Where?

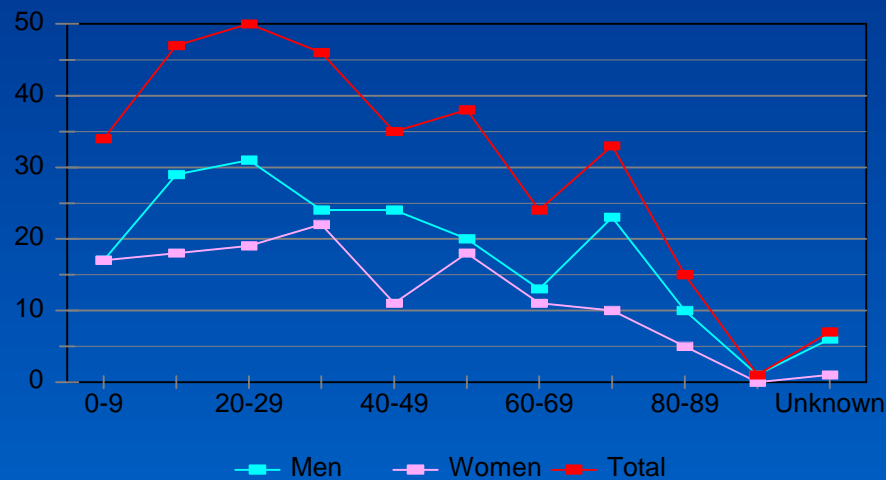
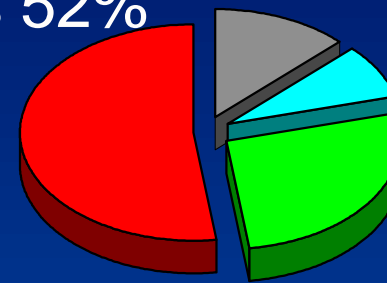


Nando Times Photo

Vehicles 52%

Homes 8%

In Water 27%

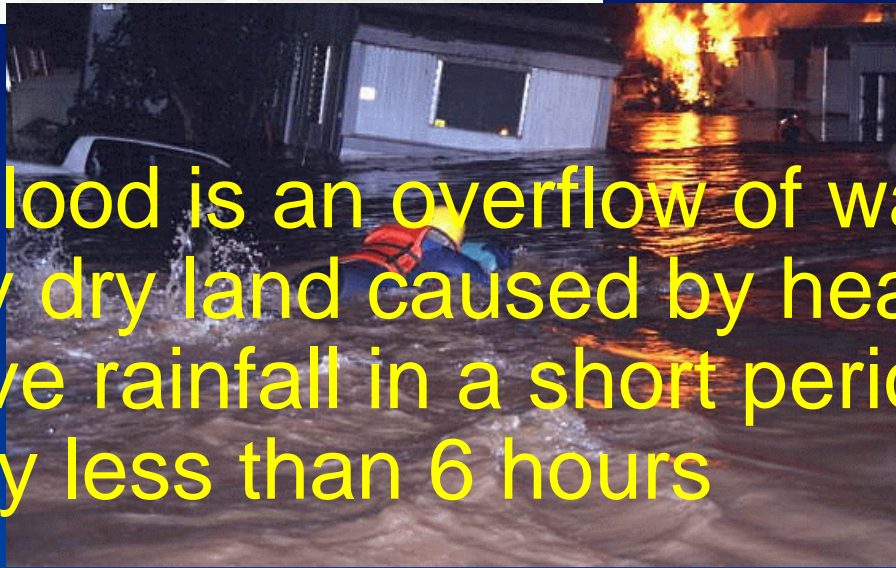


AP Photo



Flash Floods

< A flash flood is an overflow of water onto normally dry land caused by heavy or excessive rainfall in a short period of time, generally less than 6 hours





Jim Reed



NWS Photo



FEMA Photo